

XV.—A new *Agrionine* Dragonfly from Northern Australia.

By HERBERT CAMPION (Imperial Bureau of Entomology, London).

A FEW dragonflies have been included from time to time in the collections of insects sent to the Imperial Bureau of Entomology, for identification, by Mr. Gerald F. Hill, the Government Entomologist of the Northern Territory, Australia. Among these I find a small male and female evidently belonging to an undescribed species of *Austroagrion*, Tillyard, an Australian genus containing, so far, two species only. The main definition of *Austroagrion*, with which the present species agrees, will be found in Proc. Linn. Soc. N. S. Wales, xxxvii. 1912, p. 466 (1913). On p. 449 of the same publication, however, an additional character is given, namely, "Superior appendages of male longer than inferior," but in our male the two pairs of appendages are about equal in length.

The new species may be immediately distinguished from *Austroagrion cyane*, Selys, to which it appears to come nearest, as well as from *A. caeruleum*, Tillyard, by the form of the anal appendages in the male. For the two older species these appendages have been figured both by Dr. F. Ris ('Fauna Südwest-Australiens,' ii. 24, figs. 10 & 11, 1910) and by Mr. R. J. Tillyard (*l. c.* pl. xlviii. figs. 27-30, 1913), and Dr. Ris's figures are accompanied by a parallel statement of other differences between the insects compared.

The following key will separate the males of the three species, but I have made no attempt to tabulate the respective females:—

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| Lower anal appendages, in profile view, conspicuously shorter than the upper appendages, and without any central posterior process. | |
| Segments 8 and 9 entirely blue | <i>caeruleum</i> , Tillyard. |
| Segments 8 and 9 blue and bronze-black | <i>cyane</i> , Selys. |
| Lower anal appendages, in profile view, nearly as long as the upper appendages, and with a long central posterior process; segments 8 and 9 blue and bronze-black | <i>exclamationis</i> , sp. n. |

For the loan of material of *A. cyane* I am indebted to the kindness of my friends Dr. F. F. Laidlaw (1 ♂, Illawarra, N.S.W.) and Mr. K. J. Morton (1 ♂, 1 ♀, Gisborne, Victoria).

Austroagrion exclamationis, sp. n.

♂ (holotype). Koolpinyah, Northern Territory, 6. iii. 1913, G. F. Hill, numbered by the collector 421.

Length of abdomen 19.5 mm.; length of hind wing 12 mm.

Labium yellowish white. Labrum, anteclypeus, and genæ light green. Postclypeus shining greenish black. Frons light green, with a large lunulate black spot lying a little in advance of the anterior ocellus. A rectangular spot of greenish yellow connects each posterior ocellus with the anterior ocellus. Head behind the antennæ black, with greenish reflections. Postocular band narrow and obscure. Basal joint of antenna light green; second joint blackish; remainder missing.

Pronotum black, with greenish reflections; anterior margin broadly light green; a broad linear spot of light green near each external border; hind margin narrowly lined with light green, except where a conspicuous median triangular lobe projects backwards. Sides of prothorax light green.

Thorax proper greenish gold above, with a broad median band of bronze-green, and a narrower juxtahumeral band of the same colour on each side; sides of thorax pale green, with a short black line near the base of the first lateral suture, and a still shorter black line, or rather spot, at the base of the second lateral suture.

Legs whitish, with some brownish black on the femora externally; spines of femur and tibia and tips of claws black.

Pterostigma pale greenish yellow. Eight postnodals in the fore wings, and six or seven in the hind wings. M_2 originating a little proximal to the fourth postnodal in the fore wings and at or a little before the third postnodal in the hind wings. M_{1a} arises a little distal to the sixth or seventh postnodal in the fore wings and at the sixth postnodal in the hind wings. Venation otherwise similar to that of *A. cyane*.

Abdomen blue, with bronze-black markings. Segment 1 with the dorsum almost entirely bronze-black; 2 with a spot extending from base to apex, slightly constricted a little beyond the middle; 3 occupied for its entire length, except quite near the base, by a spot somewhat resembling the note of exclamation (!) in form, the greatest constriction occurring at about three-quarters the length of the segment; 4 and 5 marked much like 3, but with a little more of the blue ground-colour exposed basally; 6 and 7 entirely bronze-black, except just near the base; 8 and 9 mostly blue, with a large,

apical, triangular spot directed towards the base of the segment; 10 wholly bronze-black; sides of abdomen blue; abdomen beneath very pale, slightly bluish.

Anal appendages, viewed in profile, well separated, nearly equal in length, and not quite as long as segment 10; the upper appendage subovate, pale, giving rise to a strong black basal spur below, directed slightly backwards and towards the lower appendage; the lower appendage black, simple, almost straight, subcylindrical, and resting upon a pale bulbous base. In dorsal view the superior appendages are subconical and slightly divergent; the inferior appendages are curved inwards, and a conspicuous pale tooth projects inwards and backwards from the base of each.



Austroagrion exclamationis, sp. n., type ♂. Left profile-view of anal appendages.—H. Knight del.

♀ (allotype). 30 miles E. of Darwin, Northern Territory, 10. xii. 1914, G. F. Hill.

Length of abdomen 17.5 mm.; length of hind wing 12 mm.

Labium yellowish white. Labrum and genæ yellowish. Anteclypeus pale green. Postclypeus dark green. Frons yellowish, marked with a lunulate black spot, as in male. Head behind the antennæ dull black, with a pair of rectangular yellow spots connecting the ocelli, as in male. Postocular band narrow, greenish yellow. Basal joint of antenna yellowish; second joint blackish; remainder missing.

Pronotum glossy black, bordered as in male, excepting that the hind margin appears to be lined with light green uninterruptedly; the hind margin more distinctly trilobed than in male. Sides of prothorax pale green.

Thorax proper as in male.

Legs as in male, but with the dark markings on femora externally reduced and less intense.

Pterostigma pale greenish yellow. Eight postnodals in the fore wings and six or seven in the hind wings. M_2 separating at the fourth postnodal in the fore wings, and between the third and fourth postnodals in the hind wings.

M_{13} at the level of the seventh postnodal in the fore wings, and the last postnodal in the hind wings. Venation otherwise like that of *A. cyane*.

Abdomen: ground-colour of proximal half greenish blue, of distal half greenish brown; bronze-black markings on dorsum; segments 1 to 4 marked as in male; markings on 5 to 7 also as in male, but somewhat larger, and exposing less of the ground-colour; 8, 9, and 10 mostly, but not entirely, covered with bronze-black; 10 with the hind margin conspicuously notched in the mid-dorsal line. Anal appendages short, subconical, blackish. Ovipositor greenish brown, reaching to end of abdomen; palps projecting beyond end of abdomen, blackish, slightly recurved.

The types have been deposited in the British Museum (Natural History).

XVI.—On a new Flat-fish of the Genus *Arnoglossus* from the Black Sea. By PETER SCHMIDT, Curator of the Ichthyological Department of the Zoological Museum of the Imperial Academy of Sciences in Petrograd.

If we omit doubtful species, there are only three flat-fishes (Heterosomata) known from the Black Sea:—

- (1) *Rhombus maroticus*, Pall.
- (2) *Pleuronectes flesus*, L.
- (3) *Solea nasuta*, Pall.

It is therefore, perhaps, of some general interest that in the collections of the Zoological Museum of the Imperial Academy of Sciences in Petrograd I found a fourth and very interesting new species belonging to the genus *Arnoglossus*. In memory of the late eminent Russian ichthyologist Prof. K. F. Kessler, I have named this species *Arnoglossus kessleri*.

Arnoglossus kessleri, sp. n.

D. 74-76. A. 53-57. P. 9-11. V. 6. C. 17.
L. 1. 38. Vert. 33.

Eyes on the left side. Body oval, with very short caudal peduncle. The height of the body is 38% of the total length, the length of the head 21%. The length of the caudal peduncle (without the part of the caudal fin covered with scales) is $\frac{1}{2}$ of its least height. The mouth is very